

REMARKS/ARGUMENTS

Claims 1-32 are pending.

Claim 5 has been canceled, without prejudice.

Claims 1-7, 9, 10, 15, 16, 18, 21-24, 27 and 30-32 are rejected.

Claims 8, 11-14, 17, 19, 20, 25 and 26 are objected to.

Claims 28 and 29 are allowed.

Claims 1-4, 6, 8-10, 15, 20-24, and 27-32 have been amended. Support for these amendments can be found throughout the specification and drawings, as originally filed.

New claims 33-97 have been added. Support for these new claims can be found throughout the specification and drawings, as originally filed.

SPECIFICATION OBJECTIONS

The abstract of the disclosure stands objected to because page 31, line 3, "ABSTRACT" should read --ABSTRACT OF THE DISCLOSURE--.

The Applicants respectfully traverse the objection to the disclosure.

Section 608.01(b) of the MPEP clearly states that either of the phrases "abstract" or "abstract of the disclosure" is acceptable. Accordingly, no correction is required.

The disclosure stands objected to because of the following alleged minor informality: page 14, line 21, "portion 86" should read --portion 68--.

The Applicants respectfully traverse the objection to the disclosure.

In the interests of expediting the prosecution of the instant application, and without admission that any amendment is necessary, the Applicants have amended Fig. 5 to change reference numeral 68 to reference numeral 86. Accordingly, the objection to the specification is moot.

The title of the invention stands objected to as allegedly not being completely descriptive. The Examiner stated that a new title is required that is clearly indicative of the invention to which the claims are directed. The Examiner suggested the following title: VARIABLE DISPLACEMENT VANE PUMP WITH VARIABLE TARGET REGULATOR VALVE.

The Applicants respectfully point out that the instant application filed on December 12, 2001 already includes the title suggested by the Examiner. Perhaps the Examiner inadvertently referred to the title of the corresponding provisional application.

Additionally, the Applicants wish to point out to the Examiner that a substitute specification was filed on February 6, 2003, including a marked-up copy indicating the various changes to the specification, as well as a clean copy with the changes contained therein. The Applicants respectfully request that in the next official action, the Examiner acknowledge receipt of the substitute specification and confirm that the changes contained therein have been accepted and entered.

DRAWING OBJECTIONS

The drawings stand objected to because in Figure 2, the leader line from reference numeral (26) needs to terminate in the chamber not the eccentric ring (20),

the leader line from reference numeral (50) needs to be extended and not terminate on the eccentric ring inner surface and three profile lines are missing within the eccentric ring volume.

The Applicants respectfully traverse the objection to the drawings.

In the interests of expediting the prosecution of the instant application, and without admission that any amendment is necessary, the Applicants have amended the drawings, including Figs. 2 and 5, to show each and every feature of the invention specified in the claims. Specifically, the drawings, including Figs. 2 and 5, have been amended to correct reference numerals corresponding to elements disclosed in the specification. More specifically, the leader line corresponding to reference numeral 26 of Fig. 2 has been redrawn to terminate in the chamber and not the eccentric ring 20; the leader line corresponding to reference numeral 50 of Fig. 2 has been extended so as not to terminate on the inner ring of the eccentric ring 20; three profile lines have been added within the volume of the eccentric ring 20 of Fig. 2; and reference numeral 68 of Fig. 5 has been changed to reference numeral 86.

A Request for Approval of Drawing Changes is being submitted concurrently herewith. The Applicants aver that no new matter has been added by virtue of these amendments.

CLAIM OBJECTIONS

Claims 1, 27, 28, 30 and 32 stand objected to because of the following alleged informality: line 5, "pivotably" should read --pivotally--.

The Applicants respectfully traverse the objection to claims 1, 27, 28, 30 and 32.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is necessary, the Applicants have amended claims 1, 27, 28, 30 and 32 in accordance with the Examiner's suggestion.

Accordingly, the objection to claims 1, 27, 28, 30 and 32 has been overcome.

Claim 6 stands objected to because of the following alleged informality: line 2, "yieldably" should read --yielding--.

The Applicants respectfully traverse the objection to claim 6.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is necessary, the Applicants have amended claim 6 in accordance with the Examiner's suggestion.

Accordingly, the objection to claim 6 has been overcome.

Claim 15 stands objected to because of the following alleged informality: line 2, "of the rotor" should read --on the rotor--.

The Applicants respectfully traverse the objection to claim 15.

In the interests of expediting prosecution of the instant application, and without admission that any amendment is necessary, the Applicants have amended claim 15 in accordance with the Examiner's suggestion.

Accordingly, the objection to claim 15 has been overcome.

REJECTION UNDER 35 U.S.C. §102(b)

Claims 1, 2, 3, 6, 10, 15 and 32 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,545,014 to Sundberg et al.

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1, 2, 3, 6, 10, 15 and 32.

The law is clear that anticipation requires that a single prior art reference disclose each and every limitation of the claim sought to be rejected. 35 U.S.C. §102(b).

The law is also clear that a claim in dependent form shall be construed to incorporate all the limitations of the claim to which it refers. 35 U.S.C. §112 ¶ 4.

Claim 1 recites, among other things, a variable displacement vane pump, comprising: (1) a housing defining a chamber, a pump inlet through which fluid enters the housing and a pump outlet through which fluid is discharged from the housing under pressure; (2) a containment ring or eccentric ring pivotally carried by the housing for movement between a first position and a second position and defining an opening with an internal surface; (3) a rotor carried by the housing for rotation relative to the internal surface and having a plurality of slots extending inwardly into the rotor from an exterior of the rotor; (4) a plurality of vanes carried by the rotor with each vane slidably received in a slot in the rotor; (5) a first actuator responsive to application of fluid under pressure and operable to pivot the containment ring or eccentric ring in a first direction; and (6) a second actuator responsive to application of fluid under pressure and operable to pivot the containment ring or eccentric ring in a second direction, wherein control and positioning of the first and second actuators are a function of a combination of a first

feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Sundberg et al. teaches no such structure. Specifically, Sundberg et al. fail to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Sundberg et al. do not anticipate claim 1. Furthermore, claims 2, 3, 6, 10, 15, dependent upon claim 1, are likewise not anticipated by Sundberg et al.

Claim 32 recites, among other things, a variable displacement vane pump, comprising: (1) a housing defining a chamber, a pump inlet through which fluid enters the housing and a pump outlet through which fluid is discharged from the housing under pressure; (2) a containment ring or eccentric ring pivotally carried by the housing for movement between a first position and a second position and defining an opening with an internal surface; (3) a rotor carried by the housing for rotation relative to the internal surface and having a plurality of slots extending inwardly into the rotor from an exterior of the rotor; (4) a plurality of vanes carried by the rotor with each vane slidably received in a slot in the rotor; (5) a first actuator responsive to application of fluid under pressure and operable to pivot the containment ring or eccentric ring in a first direction; and (6) a second actuator responsive to application of fluid under pressure and operable to pivot the containment ring or eccentric ring in a second direction; wherein the first and second actuators are fluid acting directly on the containm nt ring; wherein control and

positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Sundberg et al. teach no such structure. Specifically, Sundberg et al. fail to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Sundberg et al. do not anticipate claim 32.

Furthermore, the Applicant submits that U.S. Patent No. 5,545,014 to Sundberg et al. does not render claims 1, 2, 3, 6, 10, 15 and 32 obvious.

The standard for obviousness is that there must be some suggestion, either in the reference or in the relevant art, of how to modify what is disclosed to arrive at the claimed invention. In addition, "[s]omething in the prior art as a whole must suggest the desirability and, thus, the obviousness, of making" the modification to the art suggested by the Examiner. *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 1051, 5 U.S.P.Q.2d (BNA) 1434, 1438 (Fed. Cir.), cert. denied, 488 U.S. 825 (1988). Although the Examiner may suggest the teachings of a primary reference could be modified to arrive at the claimed subject matter, the modification is not obvious unless the prior art also suggests the desirability of such modification. *In re Laskowski*, 871 F.2d 115, 117, 10 U.S.P.Q.2d (BNA) 1397, 1398 (Fed. Cir.1989). There must be a teaching in the prior art for the proposed combination or modification to be proper. *In re Newell*, 891 F.2d

899, 13 U.S.P.Q.2d (BNA) 1248 (Fed. Cir. 1989). If the prior art fails to provide this necessary teaching, suggestion, or incentive supporting the Examiner's suggested modification, the rejection based upon this suggested modification is error and must be reversed. *In re Bond*, 910 F.2d 831, 15 U.S.P.Q.2d (BNA) 1566 (Fed. Cir. 1990).

As previously noted, Sundberg et al. fail to suggest that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit. Thus, one of ordinary skill in the art would not look to Sundberg et al. for guidance on constructing a variable displacement vane pump as presently claimed.

Accordingly, Sundberg et al. do not render claims 1 and/or 32 obvious. Furthermore, claims 2, 3, 6, 10, and 15, dependent upon claim 1, are likewise not rendered obvious by Sundberg et al.

REJECTION UNDER 35 U.S.C. §102(b)

Claims 1, 2, 3, 7, 15, 18 and 32 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,545,018 to Sundberg et al.

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1, 2, 3, 7, 15, 18 and 32.

Sundberg et al. teach no such structure as recited in claim 1. Specifically, Sundberg et al. fail to teach, among other things, that the second actuator is responsive to a second actuation pressure signal.

Accordingly, Sundberg et al. do not anticipate claim 1. Furthermore, claims 2, 3, 7, 15, and 18, dependent upon claim 1, are likewise not anticipated by Sundberg et al.

Sundberg et al. teach no such structure as recited in claim 32. Specifically, Sundberg et al. fail to teach that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Sundberg et al. do not anticipate claim 32.

Furthermore, the Applicant submits that U.S. Patent No. 5,545,018 to Sundberg et al. does not render claims 1, 2, 3, 7, 15, 18 and 32 obvious.

As previously noted, Sundberg et al. fail to suggest that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit. Thus, one of ordinary skill in the art would not look to Sundberg et al. for guidance on constructing a variable displacement vane pump as presently claimed.

Accordingly, Sundberg et al. do not render claims 1 and/or 32 obvious. Furthermore, claims 2, 3, 7, 15, and 18, dependent upon claim 1, are likewise not rendered obvious by Sundberg et al.

REJECTION UNDER 35 U.S.C. §102(b)

Claims 1, 2, 3, 15, 22-24, and 32 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 3,918,855 to Bornholdt.

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1, 2, 3, 15, 22-24, and 32.

Bornholdt teaches no such structure as recited in claim 1. Specifically, Bornholdt fails to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Bornholdt does not anticipate claim 1. Furthermore, claims 2, 3, 15, and 22-24, dependent upon claim 1, are likewise not anticipated by Bornholdt.

Bornholdt teaches no such structure as recited in claim 32. Specifically, Bornholdt fails to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Bornholdt does not anticipate claim 32.

Furthermore, the Applicant submits that U.S. Patent No. 3,918,855 to Bornholdt does not render claims 1, 2, 3, 15, 22-24, and 32 obvious.

As previously noted, Bornholdt fails to suggest that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and

a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit. Thus, one of ordinary skill in the art would not look to Bornholdt for guidance on constructing a variable displacement vane pump as presently claimed.

Accordingly, Bornholdt does not render claims 1 and/or 32 obvious. Furthermore, claims 2, 3, 15, and 22-24, dependent upon claim 1, are likewise not rendered obvious by Bornholdt.

REJECTION UNDER 35 U.S.C. §102(b)

Claims 1, 2, 3, 15 and 32 stand rejected under 35 U.S.C. §102(b) as being anticipated by German Patent No. DE 3446603A1 to Berg et al.

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1, 2, 3, 15 and 32.

Berg et al. teach no such structure as recited in claim 1. Specifically, Berg et al. fail to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Berg et al. do not anticipate claim 1. Furthermore, claims 2, 3, and 15, dependent upon claim 1, are likewise not anticipated by Berg et al.

Berg et al. teach no such structure as recited in claim 32. Specifically, Berg et al. fail to teach that control and positioning of the first and second actuators are a function

of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Berg et al. do not anticipate claim 32.

Furthermore, the Applicant submits that German Patent No. DE 3446603A1 to Berg et al. does not render claims 1, 2, 3, 15, and 32 obvious.

As previously noted, Berg et al. fail to suggest that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit. Thus, one of ordinary skill in the art would not look to Berg et al. for guidance on constructing a variable displacement vane pump as presently claimed.

Accordingly, Berg et al. do not render claims 1 and/or 32 obvious. Furthermore, claims 2, 3, and 15, dependent upon claim 1, are likewise not rendered obvious by Berg et al.

REJECTION UNDER 35 U.S.C. §102(b)

Claims 1, 2, 3, 15 22-24, and 32 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 4,222,718 to Lemke.

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1, 2, 3, 15, 22-24, and 32.

Lemke teaches no such structure as recited in claim 1. Specifically, Lemke fails to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Lemke does not anticipate claim 1. Furthermore, claims 2, 3, 15, and 22-24, dependent upon claim 1, are likewise not anticipated by Lemke.

Lemke teaches no such structure as recited in claim 32. Specifically, Lemke fails to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Lemke does not anticipate claim 32.

Furthermore, the Applicant submits that U.S. Patent No. 4,222,718 to Lemke does not render claims 1, 2, 3, 15, 22-24, and 32 obvious.

As previously noted, Lemke fails to suggest that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit. Thus, one of ordinary skill in the art would not look to Lemke for guidance on constructing a variable displacement vane pump as presently claimed.

Accordingly, Lemke does not render claims 1 and/or 32 obvious. Furthermore, claims 2, 3, 15, and 22-24, dependent upon claim 1, are likewise not rendered obvious by Lemke.

REJECTION UNDER 35 U.S.C. §102(b)

Claims 1, 2, 3, 15 and 32 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,398,505 to Oogushi et al.

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1, 2, 3, 15 and 32.

Oogushi et al. teach no such structure as recited in claim 1. Specifically, Oogushi et al. fail to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Oogushi et al. do not anticipate claim 1. Furthermore, claims 2, 3, and 15, dependent upon claim 1, are likewise not anticipated by Oogushi et al.

Oogushi et al. teach no such structure as recited in claim 32. Specifically, Oogushi et al. fail to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Oogushi et al. do not anticipate claim 32.

Furthermore, the Applicant submits that U.S. Patent No. 5,398,505 to Oogushi et al. does not render claims 1, 2, 3, 15, and 32 obvious.

As previously noted, Oogushi et al. fail to suggest that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit. Thus, one of ordinary skill in the art would not look to Oogushi et al. for guidance on constructing a variable displacement vane pump as presently claimed.

Accordingly, Oogushi et al. do not render claims 1 and/or 32 obvious. Furthermore, claims 2, 3, and 15, dependent upon claim 1, are likewise not rendered obvious by Oogushi et al.

REJECTION UNDER 35 U.S.C. §102(b)

Claims 1-6, 10, 15 and 32 are rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 5,141,418 to Ohtaki et al.

The Applicants respectfully traverse the 35 U.S.C. §102(b) rejection of claims 1-6, 10, 15 and 32.

Ohtaki et al. teaches no such structure as recited in claim 1. Specifically, Ohtaki et al. fail to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Ohtaki et al. do not anticipate claim 1. Furthermore, claims 2-6, 10, and 15, dependent upon claim 1, are likewise not anticipated by Ohtaki et al.

Ohtaki et al. teach no such structure as recited in claim 32. Specifically, Ohtaki et al. fail to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Ohtaki et al. do not anticipate claim 32.

Furthermore, the Applicant submits that U.S. Patent No. 5,141,418 to Ohtaki et al. does not render claims 1-6, 10, 15, and 32 obvious.

As previously noted, Ohtaki et al. fail to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit. Thus, one of ordinary skill in the art would not look to Ohtaki et al. for guidance on constructing a variable displacement vane pump as presently claimed.

Accordingly, Ohtaki et al. do not render claims 1 and/or 32 obvious. Furthermore, claims 2-6, 10, and 15, dependent upon claim 1, are likewise not rendered obvious by Ohtaki et al.

REJECTION UNDER 35 U.S.C. §103(a)

Claims 9, 21, 27, 30 and 31 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,141,418 to Ohtaki et al. as applied to claims 1-6, 10, 15 and 32 above, and further in view of U.S. Patent No. 4,468,173 to Dantlgraber.

The Applicants respectfully traverse the 35 U.S.C. §103(a) rejection of claims 9, 21, 27, 30 and 31.

Because claim 1 is allowable over Ohtaki et al. for at least the reasons set forth above, claims 9 and 21, dependent from claim 1, are likewise allowable. The citation of Dantlgraber does not cure the deficiencies in the teachings of Ohtaki et al.

Accordingly, Ohtaki et al. and/or Dantlgraber, either alone or in combination therewith, do not render claims 9 and 21 obvious.

Claim 27 recites, among other things, a variable displacement vane-type fluid pump, comprising: (1) a housing defining a pump inlet through which fluid enters the pump, a pump outlet from which fluid is discharged under pressure and a fluid chamber between the pump inlet and pump outlet; (2) a containment ring or eccentric ring pivotally carried by the housing within the fluid chamber for movement between a first position and a second position, the containment ring or eccentric ring having an interior opening with an internal surface; (3) a rotor carried by the housing at least in part in the interior opening of the containment ring or eccentric ring, driven for rotation relative to the internal surface and having a plurality of slots extending radially inwardly into the rotor from an exterior of the rotor; (4) a plurality of vanes carried by the rotor with a vane slidably received in each slot in the rotor; (5) a first actuator responsive to a first fluid

pressure and operable to pivot the containment ring or eccentric ring toward its first position; (6) a second actuator responsive to a second fluid pressure and operable to pivot the containment ring or eccentric ring toward its second position; and (7) a control valve responsive to a first and a second feedback signal to control application of fluid pressure to the first and second actuators; a control valve responsive to a first feedback signal to control application of the first fluid pressure and responsive to a second feedback signal to control application of fluid pressure to the first and second actuators; a control valve responsive to a first pilot pressure to control application of the first fluid pressure to the first actuator, and responsive to a second pilot pressure to control application of the second fluid pressure to the second actuator; wherein control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Ohtaki et al. suggest no such structure. Specifically, Ohtaki et al. fail to suggest, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

The citation of Dantlgraber does not cure the deficiencies in the teachings of Ohtaki et al. Specifically, Dantlgraber fails to suggest, among other things, that control and positioning of the first and second actuators are a function of a combination of a

first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Ohtaki et al. and/or Dantlgraber, either alone or in combination therewith, do not render claim 27 obvious.

Claim 30 recites, among other things, a variable displacement vane-type fluid pump, comprising: (1) a housing defining a pump inlet through which fluid enters the pump, a pump outlet from which fluid is discharged under pressure and a fluid chamber between the pump inlet and pump outlet; (2) a containment ring or eccentric ring pivotally carried by the housing within the fluid chamber for movement between a first position and a second position, the containment ring or eccentric ring having an interior opening with an internal surface; (3) a rotor carried by the housing at least in part in the interior opening of the containment ring or eccentric ring, driven for rotation relative to the internal surface and having a plurality of slots extending radially inwardly into the rotor from an exterior of the rotor; (4) a plurality of vanes carried by the rotor with a vane slidably received in each slot in the rotor; (5) a first actuator responsive to a first control pressure and operable to pivot the containment ring or eccentric ring toward its first position; (6) a second actuator responsive to a second control pressure and operable to pivot the containment ring or eccentric ring toward its second position; and (7) a control circuit responsive to engine conditions for providing a variable targeting of pump output wherein pressure from the oil circuit in the engine acts on the first actuator and pressure from the outlet acts on the second actuator for variable control of the containment ring in response to these conditions; wherein control and positioning of the first and second

actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Ohtaki et al. suggest no such structure. Specifically, Ohtaki et al. fail to teach, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

The citation of Dantlgraber does not cure the deficiencies in the teachings of Ohtaki et al. Specifically, Dantlgraber fails to suggest, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Ohtaki et al. and/or Dantlgraber, either alone or in combination therewith, do not render claim 30 obvious. Furthermore, claim 31, dependent upon claim 30, is likewise not rendered obvious by Ohtaki et al. and/or Dantlgraber, either alone or in combination therewith.

REJECTION UNDER 35 U.S.C. §103(a)

Claims 9, 21, 27, 30 and 31 are rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,141,418 to Ohtaki et al. as applied to claims 1-6, 10, 15 and 32 above, and further in view of U.S. Patent No. 5,052,896 to Fischer et al.

The Applicants respectfully traverse the 35 U.S.C. §103(a) rejection of claims 9, 21, 27, 30 and 31.

Because claim 1 is allowable over Ohtaki et al. for at least the reasons set forth above, claims 9 and 21, dependent from claim 1, are likewise allowable. The citation of Fischer et al. does not cure the deficiencies in the teachings of Ohtaki et al.

Accordingly, Ohtaki et al. and/or Fischer et al., either alone or in combination therewith, do not render claims 9 and 21 obvious.

Claim 27 is allowable over Ohtaki et al. for at least the reasons set forth above. Furthermore, the citation of Fischer et al. does not cure the deficiencies in the teachings of Ohtaki et al. Specifically, Fischer et al. fail to suggest, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Ohtaki et al. and/or Fischer et al., either alone or in combination therewith, do not render claim 27 obvious.

Claim 30 is allowable over Ohtaki et al. for at least the reasons set forth above. Furthermore, the citation of Fischer et al. does not cure the deficiencies in the teachings of Ohtaki et al. Specifically, Fischer et al. fail to suggest, among other things, that control and positioning of the first and second actuators are a function of a combination of a first feedback signal and a second feedback signal taken from discrete locations separated by a degree of inherent hydraulic resistance in a downstream fluid circuit.

Accordingly, Ohtaki et al. and/or Fischer et al., either alone or in combination therewith, do not render claim 30 obvious. Furthermore, claim 31, dependent upon claim 30, is likewise not rendered obvious by Ohtaki et al. and/or Fischer et al., either alone or in combination therewith.

ALLOWABLE SUBJECT MATTER

Claims 8, 11-14, 17, 19, 20, 25 and 26 stand objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In the interests of expediting the prosecution of the instant application, and without admission that any amendment is necessary, the Applicants have rewritten claim 8 in independent form (and submit same as new claim 33) including all of the limitations of the base claim (i.e., claim 1) and any intervening claims (i.e., claim 7). Additionally, the subject matter of claims 11-14, 17, 19, 20, 25 and 26 are submitted herewith as new claims 34-42, respectively. Furthermore, the Applicants have rewritten claim 11 in independent form (and submit same as new claim 43). Additionally, the subject matter of claims 12-15, 17, 19, 20, 22, 23, 25 and 26 are submitted herewith as new claims 44-54. Furthermore, the Applicants have rewritten claim 13 in independent form (and submit same as new claim 55). Additionally, the subject matter of claims 14, 15, 20, 22, 23 and 24 are submitted herewith as new claims 56-61.

Claims 28 and 29 are allowed.

Claim 28 has been amended to correct an alleged informality, specifically, "pivotably" has been amended to --pivotally--.

CONCLUSION

In view of the foregoing, the Applicant respectfully requests reconsideration and reexamination of the Application. The Applicant respectfully submits that each item raised by the Examiner in the Office Action of March 11, 2003 has been successfully traversed, overcome or rendered moot by this response. The Applicant respectfully submits that each of the claims in this Application is in condition for allowance and such allowance is earnestly solicited.

The Examiner is invited to telephone the Applicant's undersigned attorney at (248) 364-4300 if any unresolved matters remain.


Any needed extension of time is hereby requested with the filing of this document.

The Commissioner is authorized to charge any additional fees or credit any overpayment to Deposit Account No. 50-1612. A duplicate copy of this letter is enclosed herewith.

Respectfully submitted,

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Dated: Dec. 11, 2003

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